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## Defense Styles, Defense Mechanisms and Post-Traumatic Growth in Patients Suffering From Cancer

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### Abstract

The purpose of this research was investigated the relationship between posttraumatic growth (PTG) and defense styles in cancer survivors. 95 patients suffering from cancer were selected. Participants completed posttraumatic growth inventory and defense style questionnaire. Data was analyzed using Pearson correlation coefficient and multi-variable regression. Results showed that there is a positive and significant relationship between PTG and mature defense style, and no relationship between PTG and neurotic and immature defense styles. Findings also showed that defense mechanisms of suppression and sense of humor have direct and projection has indirect relation with PTG. Defense styles and defense mechanisms in predicting PTG have a significant contribution, and defense mechanisms can predict the level of individual adaptation.

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**Keywords:** Cancer, Posttraumatic growth (PTG), Defense styles, Defense mechanisms

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### 1. Introduction

Cancer is a trauma and researches show that the patients infected by cancer achieve the growth or interests from their disease experience; these positive changes are referred to as post-trauma growth in the references (Tallman,

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2011). Post-trauma growth refers to the positive mental changes that are experienced as a result of fighting to very challengeable life conditions (Tadisch, Calhan, 2004). Josef & Linley (2006) assume these positive changes as changes in interpersonal relations (more gratitude of family members and friends, intimacy and humanism), change in the vision to self (acceptance of self-weaknesses and limitations, feeling of wisdom, strangeness) and change in the life philosophy (feeling of meaningfulness, world and life mortality, freshness of life days). In general, the excellence reports on the individuals who have experienced trauma may be classified in five elements including relationship with the others, new opportunities, individual capability, intellectual changes and understanding the life value (Tadisch, Calhan, 1996). In the meanwhile, one of important mental characteristics is defense mechanism. A defense mechanism is the act or technique of coping mechanisms that reduce anxiety generated by threats from unacceptable or negative impulses (Schacter, Daniel, 2011). Defense mechanisms, which are unconscious, are not to be confused with conscious coping strategies. Defense mechanisms may result in healthy or unhealthy consequences depending on the circumstances and frequency the mechanism is used. Defense mechanisms are automatic regulating processes that are intervened for reduction of cognitive inconsistency and minimizing the sudden changes in the internal and external reality through affecting the understanding quality of threatening accidents (Vaillant, 1992, 1994). Band et al (1986) and Vaillant & Drake (1985) in their researches understood that mental health has relationship with using mature defense mechanisms such as sublimation, sense of humor and suppression, and the individuals using matured defense mechanisms cope with the mental stress well and response the conflict adaptively. In addition, McCare, Costa & Busch (1986) theoretically believe that understanding the quality of combining the personality characteristics to defense mechanisms is highly important for prediction of phenomena such as mental health and life successes (Punamaki, 2002). Furthermore, as reported, the patients infected by chronic pain have higher values in repression of physical symptoms such as depression, anger, anxiety, pain severity and also higher perceived disability than the patients with compatible coping and even inefficient patients (Bronze et al, 2001). Therefore, in consideration of the foregoing, in this research we are seeking for determination of defense styles and mechanisms share in prediction of post-trauma growth in cancer patients.

## 2. Methodology

In terms of objective, this study is a fundamental research and in terms of method, is a quantitative and correlative study. Population of present study consisted of all woman and man patients infected by cancers in Tehran and Zanjan Counties in 1391. In this study, 95 cancer patients referring to Shohadaye Tajrish Hospital of Tehran and Zanjan have been selected as sample by convenience sampling with the age range 14-72 and educated from elementary to upper levels. The criteria for selecting samples included having reading and writing literacy; passing about 6-7 months after diagnosis; not being at stage 4; surgery experience, chemotherapy or radiotherapy. Simple and multivariable regression procedure and two questionnaires were used for this end; one post-trauma growth inventory (PTGI) of Tadisch & Calhan (1996) that is allocated for evaluation of individuals' self-understanding changes related to experience of harmful events. This questionnaire contains 21 items each including 6 points in Lickert scale that has been graded from 0 to 5. In the extant study, the validity was equalled to  $\alpha = .881$ , and defense styles questionnaire (DSQ-40) consisted of 40 items and evaluates 20 defense mechanisms and 3 defense styles including mature and traumatic. The responses are recorded on 9-point Likert scale from completely disagree (1) to completely agree (9). Cronbach's alpha was equalled to .610, .456 and .742 for mature, immature and neurotic defense styles, respectively.

## 3. Results

In table 1, descriptive indices for research variables have been calculated. Accordingly, the mean value for post-trauma growth was equal to 75.45 and standard deviation 13.62.

Table 1. Summary of calculations of variables' descriptive indices

Description	Post-trauma growth	Mature defense style	Immature defense style	Neurotic defense style
Number	95	95	95	95
Mean	75.45	48.14	117.55	5.48

Table (2) shows the correlation between predictor variables and criterion variable. According to the results, there is

a significant association between mature and neurotic defence styles as predictor variables and post-trauma growth as criterion variable, in significance level  $\alpha=.01$  that is equal to .467 for mature defence style and .29 for neurotic defence style. It is notable that no significant association observed between immature defence style and post-trauma growth, statistically.

Table 2. Correlation matrix of research variables

Description	PTG	MDS	IFS	NDS
Post-trauma growth	1	-	-	-
Mature defense style	.467** (.001)	1	-	-
Immature defense style	-.021 (.840)	.196 (.057)	1	-
Neurotic defense style	.29** (.004)	.389** (.001)	.351** (.001)	1

\*\* Significance level .01. , PTG=Post-trauma growth., MDS= Mature defense style., NDS= Immature defense style.

In order to examine the research hypotheses, multiple regression analysis in step by step method has been used. Results thereof are provided in following table:

Table 3. Summary of model

Variable	R	R <sup>2</sup>	Modified R <sup>2</sup>	SEB	F	Sig	Beta	T	SigT
Mature defense style	.467	.219	.210	.932	26.004	.001	.467	5.099	.001

Table 3 indicates that out of mature, immature and neurotic defense styles, only there is a significant relationship between mature defense style and post-trauma growth and 21% post-trauma growth variance is expressed by mature defense style. Thus, post-trauma growth may be predicated based on mature defense style.

Table 4. Summary of model

Variable	R	R <sup>2</sup>	R <sup>2</sup>	SEB	F	Sig.	Beta	T	Sig.
Suppression	.391	.152	.143	.319	16.733	.001	.256	2.554	.012
Sense of humor, projection	.463	.215	.197	.318	12.562	.001	.245	2.435	.017
Suppression, sense of humor, projection	.503	.253	.229	.319	1.293	.001	-.202	-2.176	.032

Table (4) shows that altogether three variables including suppression, sense of humor and projection were extracted as predictor variables and no other variable was found that has significant correlation, and these 3 variables express 22.9% of post-trauma variations. Beta coefficients for defense mechanisms of suppression, sense of humor and projection are significant in level  $\alpha=.05$ , therefore these variables are significantly effective on prediction of post-trauma growth.

#### 4. Discussion and conclusion

The objective of present study is determination of defense styles and mechanisms share in prediction of post-trauma growth in cancer patients. Summary of results indicated that the mature defense style has significant share in prediction of post-trauma growth of cancer patients. ( $P<.001$ ,  $F_{1,93}=26.004$  and  $R=.467$ ) and this variable predicts 21% of post-trauma variance. A probable expression may be the individuals would like to believe that the live in a justly world or are invulnerable. Traumatic events break the both beliefs and thereafter the individuals seek for recovering the balance in their life. This process may be occurred as a result of personal growth of client in further perception of communication with the others, increase of personal power, evaluation of new facilities in life and increasing the intellectual communication (Tadischi, Park, Calhan, 1998). As Showry et al (2007), this excellence and growth determines a significant rate of variance for prediction of welfare and mental disorder. Calhan & Tadischi (1999) raised that when the previous beliefs of a person are disturbed by the traumatic events, at first provide the requirements for his/her mental disorder and later the person starts mechanisms responding these conditions in order to avoid the continuation of these conditions. These mechanisms at the primary stages are automatically until getting more professional and rely on the effort. According to the applied studies, one of variables that can play the role of this dynamism for responding the stressful situations and traumatic events may be

defense style of patient. In addition, the findings indicated no significant association between immature and neurotic defense style and post-trauma growth, and immature and neurotic defense styles are not significant predictors for post-trauma growth. For expression of these results, to say, Freud's viewpoint about the defense mechanisms is that "we rarely use only one of these defenses and commonly defense ourselves against the anxiety by several mechanisms simultaneously, and there is a little overlap between these defenses (Cramer, 2000). Summary of results indicated that defense styles and mechanisms are significantly effective on the prediction of post-trauma growth and defense mechanisms in general playing their protecting role as the fender for anxiety may predict the patient's compatibility in the future. Accordingly, preventive measures may be designed for increasing the quality of life of these patients. Furthermore, the findings show that defense mechanisms are effective on the post-trauma growth as a process and can, beside mental rumination raised by the Tadischi & Calhan (2004), act as beginner of post-trauma growth process.

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